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ALASKA ICE SEAL RESEARCH PLAN
FY2009

A COORDINATED PLAN FOR RESEARCH ON ICE-ASSOCIATED SEALS IN ALASKA, INCLUDING ACCOMPLISHMENTS AND CRITICAL UNFUNDED RESEARCH

Prepared jointly by

The Ice Seal Committee
National Marine Fisheries Service
Alaska Department of Fish and Game
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EXECUTIVE SUMMARY

Four species of ice-associated seals, spotted (*Phoca largha*), ribbon (*Histriophoca fasciata*), ringed (*Phoca hispida*), and bearded seals (*Erignathus barbatus*), inhabit the Bering, Chukchi, and Beaufort seas of the Alaskan Arctic. Collectively, they are known as ice seals and despite the fact that these seals are vital resources for Alaska Native communities, as well as key ecological components of arctic marine ecosystems, relatively little is known of the seals' population status, stock structure, trends in abundance, life history, seasonal movements, diving behavior, diet or harvest rates. Ice seals are highly dependent on suitable sea ice condition and distribution, and therefore may be particularly vulnerable to climatic change, offshore oil development, or other environmental impacts that could alter their habitat.

The Ice Seal Research Plan is a consolidated plan for all Alaskan ice seal research funded in whole or in part through the NOAA Fisheries (NMFS) budget. Research on Alaska's ice seals is carried out principally by NMFS, Alaska Department of Fish and Game (ADF&G), University of Alaska Southeast, and the Alaska Native Regions represented by the Ice Seal Committee (North Slope Borough, Maniilaq, Kawerak, Bristol Bay Native Association, and the Association of Village Council Presidents). The combined research efforts by these groups focus on ice seal population abundance and trends, harvest, stock identification, general biology and life history, and human interactions. The principal objectives of the research plan are to:

1. Consolidate currently-funded projects into a single coordinated effort with maximum relevance to management objectives;
2. Describe additional research projects that are currently unfunded, but for which funds are critically needed;
3. Increase the dialogue, coordination, and collaboration among interested parties through the process of annually reviewing, evaluating and updating the research plan.

The Research Plan for FY 2009 describes 12 current and ongoing projects and an additional 10 project proposals that identify and address specific research needs, including the identity and status of ice seal populations, the comprehensive assessment of ice seal mortality including harvest, and the impact of industrial & climatological events on ice seal habitat. **The project topics, and the amounts required to support these important projects are listed in Table F.1.**

The Research Plan plays a key role in the co-management process put in place by the Ice Seal Committee and NMFS. The Plan enhances communication between the research agencies and the Ice Seal Committee by establishing a framework that will assist in setting priorities and tracking performance of research projects. The plan is also expected to provide helpful information to the Alaska Scientific Review Group about ice seal population status and research.

F.1 SUMMARY OF RESEARCH NEEDS AND FUNDS REQUIRED

Project No.	Project Title	Funded FY08?	Funding Required FY09
B	**CURRENT PROJECTS**		
	B.1 Population identity and status		
B.1.1	Ice seal life history studies	YES	$225K
B.1.2	Population structure and seasonal movements of ringed seals	YES	$102K
	B.2 Mortality and harvest		
B.2.1	Development of a harvest monitoring program for ice seals	YES	$80K
B.2.2	Beaufort Sea ice seal sampling and archival project	YES	$30K
	B.3 Habitat and climate change		
B.3.1	Fatty acid study of polar bears and ringed seals	PARTIAL	$25K
B.3.2	Movements, habitat use, and foraging behavior of bearded seals in the Chukchi and Bering Seas	YES	$K
B.3.3	Movements, habitat use, and foraging behavior of spotted seals in the Chukchi and Bering Seas	PARTIAL	$52K
B.3.4	Movements, habitat use, and foraging behavior of ribbon seals in the Bering Sea	YES	$254K
B.3.5	Analysis of trends in sea ice extent, snow cover, and dates of snow melt as a context for interpretation of ecological studies on arctic seals	NO	$50K
B.3.6	Assessing ringed seal abundance and sea-ice characteristics: Comparisons of unmanned aircraft systems (UAS) and sensors.	YES	$K
B.3.7	Densities and distribution of ribbon, spotted, and bearded seals in the eastern Bering Sea	PARTIAL	$125K
	B.4 Education and outreach		
B.4.1	Traditional hunting workbook – ice seals	YES	$17K
C	**RESEARCH NEEDS AND PROJECT PROPOSALS**		
	C.1 Population identity and status		
C.1.1	Population structure of ringed seals (Phoca hispida) in the Chukchi and Beaufort seas	NO	$90K
	C.2 Mortality and harvest		
C.2.1	Subsistence harvest monitoring	NO	$375K
C.2.2	Nutrients and contaminants in bearded seal based foods, and assessment of risks and benefits to human consumers	NO	$42K
	C.3 Habitat and climate change		
C.3.1	Compile an annotated list of existing programs collecting or using seal tissues	NO	$10K
C.3.2	Under-ice foraging ecology of ringed seals	NO	$196K
C.3.3	Develop methods for residents of coastal communities to record and communicate observations of animal and environmental conditions	NO	$50K
C.3.4	Development of live-capture techniques for telemetry and ecological process studies of arctic ice seals	NO	$125K
C.3.5	Effects of long term changes in ice cover on the abundance, demography, and reproductive ecology of Alaskan bearded seals	NO	$230K
C.3.6	TEK - Inupiat Observations of Ice Seals and Climate Change in Barrow, Alaska	NO	$25K
	C.4 Education and outreach		
C.4.1	Education and outreach	NO	$100K
TOTAL			**$2203K**